Newsletter

LARRY JORDAN.BIZ

Larry's Final Cut Pro Newsletter

Editor: Larry Jordan
Issue #24 - March, 2006

Welcome to the March/April edition of my monthly Final Cut Pro newsletter!

The goal of this newsletter is to provide information helpful to the professional user of Final Cut Pro. This newsletter publishes each month. Past issues are not archived, however, key articles are posted to my website for your reference. All software references are to Final Cut Pro 5 unless otherwise noted.

Please invite your friends to visit my web site -- www.larryjordan.biz We now have over 100 tutorials to help you get the most out of Final Cut Studio!

Newsletter Contents

Tip: How to read this newsletter

One of the things I've noticed over the years is how soon people read this newsletter after it's published. Easily 50% of my readers read each newsletter within 36 hours of its release.

Which is great and, frankly, enormously gratifying. But here's a tip that I suggest you consider. I try hard to make each issue as accurate and clear as possible. But, sometimes, mistakes happen and I correct them as fast as they are pointed out; generally within a day or two.

So, make it a practice to come back to the newsletter after a few days. By then, any errors will be fixed and you can print a copy for your records. I flag all changes with the word **Update**.

By the way, if you spot a mistake, please let me know.

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**Finally! Back-issues of
Larry's Final Cut Newsletter now available!**

You've been requesting them for years. So, now, I've created PDFs of all the back issues to my newsletter!

Two CDs -- one for each year -- with more than 560 pages of tips, techniques and secrets.

> **CD #1:** *The 2004 back issues*, including the very rare first three issues. 240 pages of tips and techniques covering Final Cut Pro 3, 4 and HD. This CD includes many tips that have never again been published. Each issue is a PDF file, fully searchable and stored on a CD. $29.95. Click here to order.

> **CD #2**: *The 2005 back issues*. 324 pages of tips and techniques, with hundreds of screen shots, step-by-step instructions and lots of reader mail. These issues cover Final Cut Pro 4, HD, and 5 and related applications. Each issue is a separate PDF file, ten PDF files in all, suitable for printing and stored on a CD. $29.95. Click here to order.

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By the way, you can see the entire range of training materials we have available by clicking here: http://www.larryjordan.biz/products.html.

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**The DR Group and Larry Jordan team
to discuss a workflow for editing 24-frame projects**

If you are in the Los Angeles area, this Tuesday, March 21, starting at 7:00 pm, Larry is hosting a discussion of 24-frame editing workflow at the DR Group.

Whether you are shooting 24-frame DV, HDV, P2, XDCam, HDcam, Varicam or D5, if you are trying to make sense of how to shoot 24-frame projects, edit them in Final Cut, and output them for either SD or HD distribution, you *need* to be

at this seminar.

Registration is only $49.95 and includes presentations and discussions from Lowell Kay, president of the DR Group, Jon Thorn, AJA Project manager, Joe Faissal, on-line editor at the DR Group and hosted by Larry Jordan.

Everyone attending will receive a free 16-page workbook and lots and lots of answers to their technical questions.

I'm very excited about this seminar and look forward to seeing you there.

Click here for more info: http://store.thedrgroup.com/24frwose1.html

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Article: What I've learned about HDV

During my recent seminar tour, I had a chance to show many of you how to capture, edit, conform, and output HDV within Final Cut Pro.

However, as frequently happens, teaching goes both ways - I learned a great deal from your questions and comments. Now that the seminar is over, I wanted to share some of my conclusions about working with HDV.

First, HDV can create some very cool pictures -- especially when you need to shoot HD video on an extremely low budget. However, HDV also has significant limitations that may, for some, outweigh it's cost savings.

HDV Strengths

For a relatively small amount of money, you can shoot an HD picture. You also have a variety of frame rates to select from, including 23.98, 25, and 29.97. Some cameras offer additional rates beyond these three. And, the default aspect ratio for HDV is 16:9.

In brief, HDV's strength is its low-cost, HD images.

HDV Weaknesses

However, on the negative side, the weaknesses of HDV are:

- The HDV image is 1440 x 1080, which does not precisely match either the 720p or 1080i format.
- HDV is enormously compressed, creating the possibility of significant motion artifacts when the camera is moved, or zoomed, quickly. HDV uses MPEG-2 compression, the same as a DVD.

- This compression groups several pictures into a "group of pictures," called a GOP, rather than each picture being it's own entity. 1080i HD groups 15 images into one GOP. 720p groups 6 images into one GOP.
- This GOP method of compression means that HDV is not accurate for timecode or frames when capturing or outputting. (Editing HDV inside FCP is frame-accurate, however.)
- HDV uses extreme color sampling, resulting in very, very poor color keying, color correction, or compositing results. (HDV uses 4:2:0 color sampling, the same as a DVD. Here's an article that explains it in more detail.)
- HDV renders take about six times longer than DV. This is actually a result of rendering the larger HD image, versus an SD image; still, this will take longer than you expect.
- HDV needs to be conformed, or rebuilt, into a consistent GOP structure before it can be output to tape or exported to a file. This conforming can take an exceedingly long time. (For instance, conforming a 30 second sequence consisting of five shots, took over 10 minutes on my PowerBook. Conforming a complex hour-long sequence could take several hours on a G-5.)
- HDV can only use Print to Tape, not Edit to Tape, due to the timecode inaccuracies of HDV.

For these reasons, I am no longer the fan of HDV that I used to be. What I've discovered is that we need to separate how we CAPTURE the image from how we EDIT the image.

Using HDV for capture

HDV is an inexpensive way to capture HD images, provided you are not doing any chroma-key or color work. If so, HDV is the wrong format to use because the compression process removes almost all the color information from an image. And once the image is recorded to tape, the color can not be rebuilt into being better than HDV.

If color or motion quality are important, you are far better off shooting in DVCPro-HD. This codec, which takes about 4 times the disk space of HDV, uses significantly better color sampling, compression and image quality.

Using HDV for editing

Based on what I've learned during these last several weeks, here are my new criteria:

- If money or disk space are more important than time or color, HDV is a good choice.
- If color or time are more important than money or disk space, HDV is not a good choice.

What I'm recommending to my clients now is that if they choose to use HDV for image acquisition (again keeping in mind the problems with color and motion artifacts), they should **not** capture HDV into Final Cut via FireWire, instead they should convert from HDV to DVCPro-HD during capture.

(DVCPro-HD is one of the native formats of Panasonic's P2 camera.)

This requires an HD capture card, from companies like AJA or Blackmagic Design, to do the cross-conversion on the fly during capture.

DVCPro-HD provides the following benefits:

- Frame-accurate timecode during capture
- Color sampling of 4:2:2 (at least 4 times better than HDV)
- No time lost to conforming
- Can be edited on slower computer systems
- Support for both 720p and 1080i images
- Frame-accurate edits when laying back to tape

Capturing an HDV signal to DVCPro-HD requires:

- A camera that shoots DVCPro-HD natively, such as the Panasonic P2, or…
- An HD-SDI connector on your camera or deck, such as the Canon XL H1, or…
- HD component video out of your deck or camera, running into an HD SDI converter from AJA, Miranda or others.

The idea is to take the HDV signal, convert it to HDSDI, then use your capture card to convert it into the DVCPro-HD format for editing.

Here's another interesting idea. The Canon XL H1 has an HDSDI port on the camera. If you record to a hard disk, such as the FireStore, directly from this port, you can record in a much less compressed format that HDV itself. Plus, you bypass the entire capture process because your file is already digital on the hard disk.

This means you can use an HDV camera for image acquisition, yet record image quality far superior to HDV.

Now, using either the P2 or Canon XL H1 in this way opens up the whole issue of how to deal with tapeless video. And I have major problems with all the current solutions proposed by Panasonic and others for archiving footage that did not originate on tape.

For now, I only recommend tapeless recording for those images that do not need to be archived for long periods of time. My hope is that we will see more robust solutions from a variety of vendors at NAB this year.

This whole process of shooting and editing HDV is very much a format in transition -- and archiving is only one of the major issues still in need of a better solution than exist currently.

Still, I wanted to give those of you thinking about working with HDV some options to think about as you strive to get more work done and still maintain quality.

As always, I invite your comments.

- - -

Update: This HDV article generated a lot of contrasting comments that I need to include in the current issue.

Graeme Nattress corrected me on HDV image size:

> Larry, you wrote: "The HDV image is 1440 x 1080, which does not precisely match either the 720p or 1080i format."
>
> And neither does anything else even remotely affordable. To get 1920x1080 you need to go to D5 or HDCAM SR!!! HDCAM is also 1440x1080 (as is most broadcast HD) and DVCProHD is 1280x1080.
>
> Just think of 1440 as "anamorphic" (which it isn't really) and you'll be fine. It's a non-issue, just non-square pixels.
>
> 720p HDV is, of course 1280x720, which is what it should be, square pixels. DVCproHD is 960x1280, which again, is reduced.

Larry replies: Sigh… Wasn't HD supposed to REDUCE all this format confusion. Thanks for the correction, I'll stop worrying about image size.

Gardner Reynolds writes:

> My only comment [on your HDV article] is the Z1 captures (if you know what you are doing) some smoking images in any mode and is great to have in the bag with other DV cameras. I agree it's a format in transition but at least a camera in that price range gets us started and warmed up on the HDV platform. Thanks for the good articles.

Tom Wolsky agrees:

You might want to restate it when you write: "The HDV the compression process removes almost all the color information from an image."

I don't think it's accurate to say it removes almost all the color information from an image. You make it sound like it's going to practically desaturated. It sounds as if the color rendition of HDV is very poor, which is just not so. The color reproduction on most HDV cameras is outstanding. HDV is not, I don't think, substantially more difficult to chroma key than DV, or chroma keying DV in PAL, which uses the same color space.

Graeme Nattress provides a technical perspective:

[This color compression is] no more extreme than DV (chroma for 4 luma, just in a different pattern). Interlaced 4:2:0 is nasty, but this, as always only effects chroma resolution, not quality. You shouldn't see chroma sampling causing colour correction problems - it's the excessive compression that gets in the way here. And remember, HDCAM is 3:1:1 with only 1 chroma for 3 luma, so hardly much better :-(

Tom continues:

You might want to explain how convert from HDV to DVCPRO HD during capture. I didn't realize that AJA and Blackmagic Design can convert to DVCPRO HD. I don't see anything on their web sites to indicate that they can capture to DVCPRO HD. They have DVCPRO HD hardware acceleration and output support, but I think they capture to uncompressed HD. Big fast RAID drives. You're not in the HDV league at all any more. This is the old use DV for acquisition and then bump to uncompressed route. Great if you have the bucks and your production has the budget.

Larry replies: I just called tech support at AJA and confirmed that they can convert HDV to DVCPRO HD in real-time using their Kona 2 or Kona 3 capture cards.

Tom goes on:

As for exporting for DVD, I wouldn't downconvert on export, but export a self-contained native HDV file and have Compressor do the SD MPEG-2 encoding. The H.264 I'm sure works well but it's probably really, really slow as all H.264 compression is quite time consuming. Then doing

another pass for MPEG-2 into DVD seems like an extra long step.

Larry replies: My point is that when you are working with HDV, you need to allow time, lots and lots of time, for conforming. Conforming must occur whether you are outputting to a QuickTime movie or to a video tape.

On the issue of whether converting from HDV to DVCPro HD is a good idea, opinions diverged. I respect Graeme too much to ignore his comments:

Graeme Nattress writes:

> [Should you convert HDV to DVCPro HD?] No. Never! Why? Adding compression on top of compression is just bad. DVCproHD is way too compressed. It's full of artifacts even straight of a varicam. To add that compression on top of HDV just makes a mess.
>
> Answer - edit HDV native - it's easy on a decent mac, and then just change the compression right at the end of editing to "uncompressed", do a final render before going out to master tape. Again, you'd never use HDV as a master - even one compression back to HDV looks awful.
>
> Only use DVCproHD if that's what you shot, or are going back to DVCProHD tape. If you're recording live from SDI, uncompressed HD, or PhotoJPEG 75%, are much superior.

Ed Yost comments:

> Up until two weeks ago I was working on the DVD documentaries for a very high profile film in which all the behind the scenes footage and most all interviews where shot in HDV. As the film progressed the DVD producer started to add NTSC footage shot on digital beta, NTSC DV, and DVCPro HD 24p. The project became an incredible mess and still is.
>
> Unfortunately many of these producers pretend to be know-it-alls and don't really take advice when given. Sure wish they would take your seminars.

Larry replies: Thanks for all your comments. I'll update this as more come in.

Converting HDV to a standard def DVD

Following on this discussion of HDV, **Lee Burrows** writes:

> I would like to subscribe to your newsletter and wish I had known about your newsletter when I encountered my own HDV to SD DVD issues.
>
> I recently found a different solution that produced a higher quality result than the one talked about here that I thought I would share. I found that running the footage back through the deck to convert the HDV to DV gave me not very good quality for my final compression of DV to SD DVD.
>
> Here is what I did to go from HDV sequence to SD DVD and it held up pretty well.
>
> I exported my HDV sequence from FCP by exporting via QT conversion in the H.264 codec. Yes, I know its designed for true HD but it handles HDV the best. I
> even let it resize my sequence instead of doing it in compressor to 720X480 however looking back it might be a little better letting compressor resize it.
>
> I did many tests and this came out the best from an HDV sequence. I tried everything from HDV to animation codecs, to bringing it out of my FCP edited sequence back to my Sony HDV deck and back in with a down conversion to DV 720X480 and all had similar results of either bad artifacting or strobing or field issues in the graphics. This codec did it.
>
> Try this and see for yourself, but if you are working in an HDV 1080i sequence and need an SD DVD this is the way to go…SO FAR! I'd still like to see the quality [get] better and like to see the quality [get] better from Blackmagic NTSC-Jpeg, DV, etc… codecs to DVD but have yet to come up with something that I'm happy with.

Larry replies: Lee, thanks for sharing your technique. I'll let you know if anyone reports a better way to convert from HDV to a SD DVD MPEG-2 file.

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Technique: Explaining the Video Processing menu

This technique was suggested by Bourne Ace, who wrote:

> Larry I am having trouble understanding the Video

Processing tab of Sequence Settings.

Could you help me out?

Larry replies: There are some little known settings inside Final Cut that can materially affect the final look of your sequences. When I mention these during my classes, I've discovered there is a lot of confusion about what these do, so here's a more detailed explanation.

Your preference settings control what happens when you create a new sequence. However, once a sequence has been created, changing your preferences has no effect. To change the settings of an existing sequence, you need to open the sequence in the Timeline and make sure it's active.
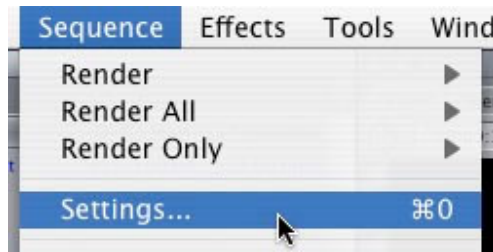
Then, go to **Sequence > Settings**.
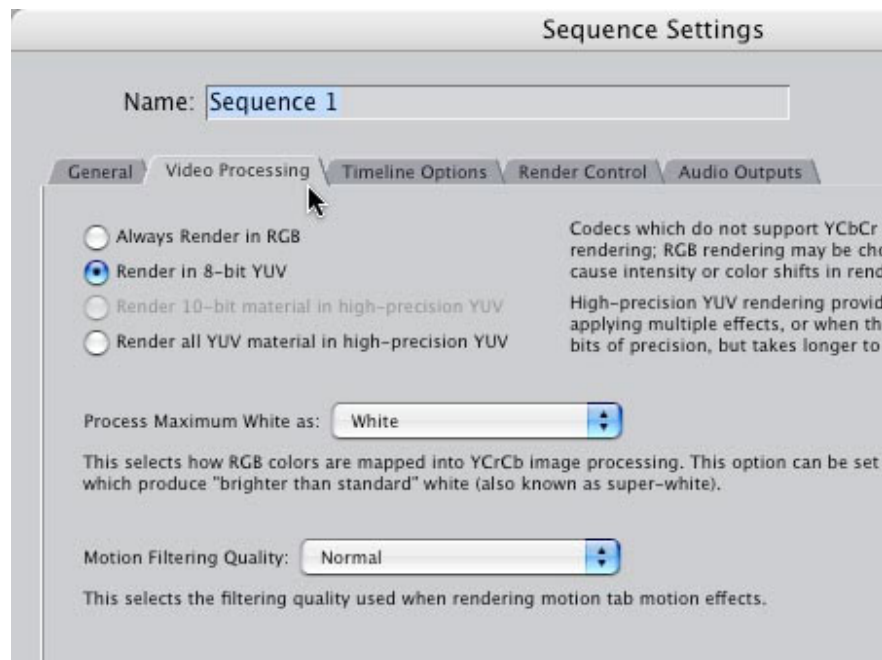
Click on the **Video Processing** tab.

There are three sections to this dialog box. The top third determines render quality, the middle tells Final Cut how to handle white level processing, and the bottom third, which is new in FCP 5, affects rendering of motion effects. Let's take a look at each one.

Video bit depth
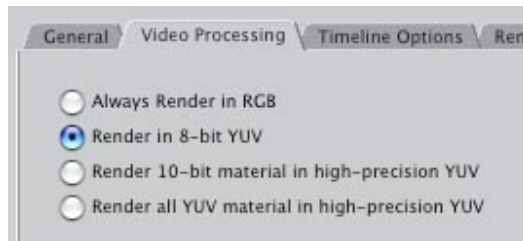
The radio buttons at the top control the bit-depth that Final Cut uses to render your sequence.

Video bit depth determines how many shades of black and white, color, or alpha channel transparency each pixel can contain. 8-bit video allows 256 different shades of gray, or shades of a single color, such as red. 10-bit video allows 1024 shades of gray, or shades of a single color.

(Remember that the color of each pixel is determined by the mix of red, green and blue colors - so in a 10-bit environment, each pixel can have one shade to 1024 shades of red, one of 1024 shades of green and one shade of 1024 shades of blue.)

For black and white images, 8 bits is generally considered sufficient to represent the range of gray scale that is conveyed in a high-quality black and white photograph.

For color, however, 8-bit video is considered limited, especially when using gradients or compositing. In these instances, 10-bit video provides much better images.

Here's how to choose.

- If you are shooting DV, HDV, BetaSP, or DVCPro-HD, select "Render in 8-bit YUV" because all these are 8-bit formats.
- If you are capturing using "Uncompressed 10-bit video," select "Render in 10-bit…"
- If you are working EXCLUSIVELY with images created on your computer, for instance, animation, select "Always render in RGB."
- If you want the highest quality for your compositing and effects, select "Render all YUV material in high-precision YUV."

Update: Graeme Nattress notes:

> Larry - have you ever seen setting this to "High Quality" to produce a quality improvement or difference? I've only seen bugs caused by > 8-bit render and much increased render times.

Update: Two notes: 1) All render files, regardless of quality, take the same amount of disk space, and, 2) video always

creates YCrCb images and the computer always creates RGB images. When you are working with video always work in a YUV (YCrCb) color space. (YUV is the analog version of video, YCrCb is the digital form of video.)

Processing white levels
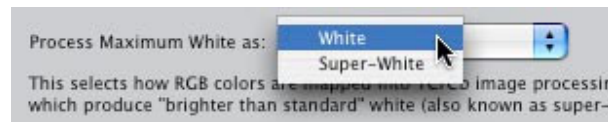
This setting determines how Final Cut handles white levels of imported graphics. This has NO effect on white levels inside video clips. (To control those you need to use the Broadcast Safe filter.)

Updated wording: The default for this setting changed in recent versions. In earlier versions of FCP, it was set to "Super-white." In FCP 5, it is set to "white." What's the difference?

When you shoot DV, or create images on your computer, you are working in a pure digital grayscale space. However, analog video works in the more restrictive gray scale range of YUV.

Updated wording: In digital video, black is set to 0 on the waveform monitor. In NTSC analog, black is set to 7.5% (7.5 IRE to you video engineering types.) In Final Cut, always set your black level to 0. (In NTSC-Japan and PAL, analog black is set to 0.)

Update: Graeme Nattress writes:

> It's also good to differentiate between analogue voltages in IRE and FCP levels in % and not mix them. The % levels in FCP don't always map to analogue voltages in the way you'd expect.

> Most video formats shoot superwhite. If you have superwhite video in a white timeline, and do a dissolve even, you might see a luma shift effect as the rendered video gets clamped, whereas the rest does not. This setting doesn't effect video unless it has a render.

Larry, again: In digital video, white is set to 109%, while in analog, white is set to 100%. The problem is when you broadcast whites that exceed 100%, the image will tear, edges will ripple, and there may even be a buzz in the audio.

Consequently, you need to make sure that your white levels don't exceed 100% for anything you create that will be displayed on a TV set. These white levels are clamped in one

of two ways: for graphics and text, and for video.

Video is clamped using the Broadcast Safe filter. Graphics and text are controlled from the Video processing tab. Here's an example.
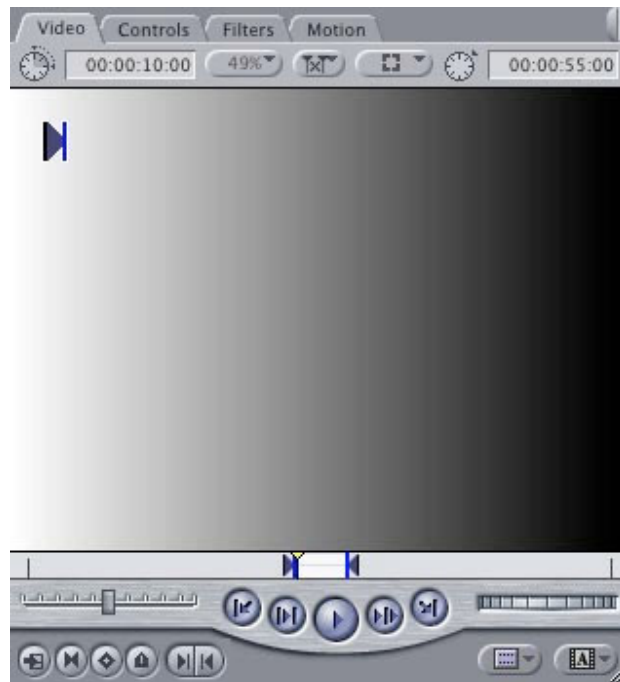
I've created a gradient that shades from white to black.
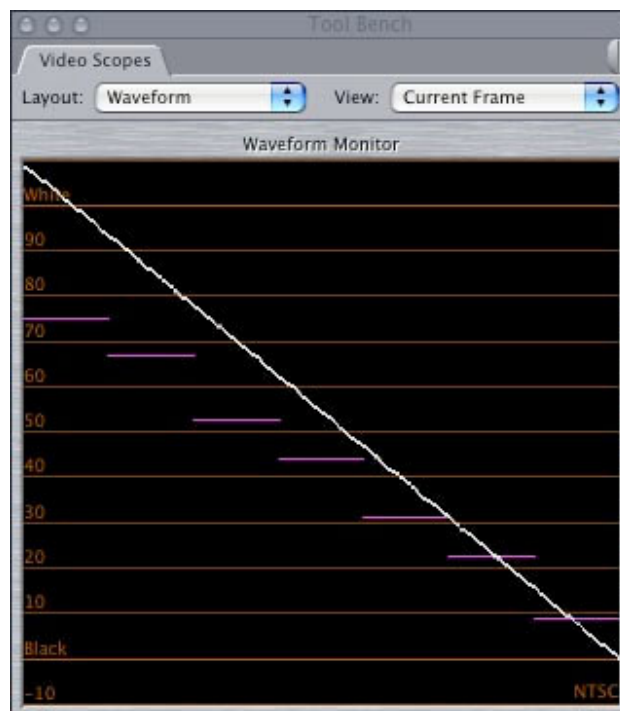
This is the waveform monitor with white levels set to "Superwhite." See where the white level on the left exceeds 100%; shooting all the way to 109%? This far exceeds the technical standards for your TV set.
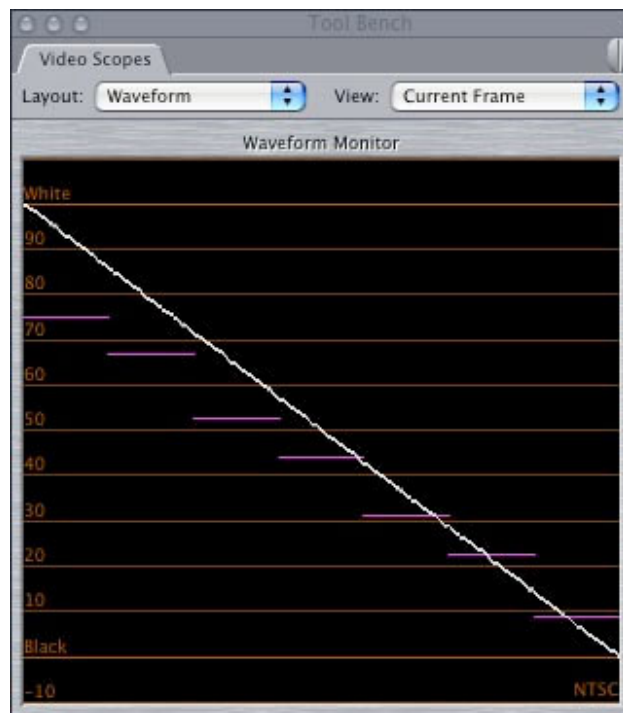
Here's the waveform monitor with the white levels set to "White." The image is the same. What's different is that the gradient has been "clamped," or adjusted, so that the maximum white level does not exceed 100%; making it safe to broadcast.

Updated wording: The rule is clear. If you are outputting to DV or the computer, and never expect to view your work on a TV set, you can set this pop-up menu to "Superwhite." However, if you want to be safe, leave this set to "White."

Motion filtering
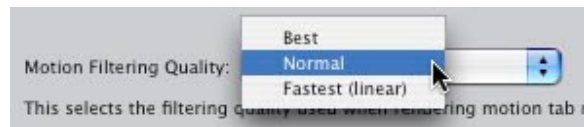
New in FCP 5 is the bottom menu -- motion filtering. This controls the quality of your renders for motion effects, including scaling and rotation.

In FCP HD, Apple chose to have everything render in "Fastest" mode. This provided the greatest speed, but there were problems with objects that changed in size or rotation. They wouldn't look as good as they could.

So, with FCP 5, Apple provided two more choices: "Better" and "Best."

In general, if you are creating motion effects, that is, you are changing settings in the Motion tab of the Viewer, you will get improved quality by changing these settings.

Here's the rule: you can set your render settings to "Fastest" while you are editing your project. However, when you get ready for final output, change your setting to Best and re-render.

Update: Tom Wolsky adds:

> Tests have indicated there is no real difference between Normal and Best, and the render hit in time is pretty big.

Larry, again: Changing this setting will ALWAYS delete all your existing render files for the currently active sequence.

However, there's a bug in the current version of Final Cut (5.0.4) that effects this decision. If you add a keyframe for rotation, even if you only add one, your motion filter settings automatically reset back to Fastest.

If you are not changing motion tab settings, you can ignore this. If you are, experiment with these settings to see whether the improved quality is worth the extra rendering time. And, remember, rotation keyframes reduce the quality back to the same level as can be achieved in FCP HD.

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Larry's Seminar Tour Comes to Australia!

After a very successful seminar series here in the US, Young Australia Productions has invited Larry to bring his Final Cut Pro Seminar tour to Australia. This four-hour seminar will be at the Mercury Cinema in Adelaide, April 7, 2006. Tickets are $275 (AUS) and seats are limited.

At this seminar you will discover productivity secrets and technique you never knew existed in Final Cut -- how to optimize your system, how to organize your files, how to edit faster, trim faster and improve your output. All the subjects have helped editors across the US improve their productivity!

In addition to this seminar, Larry has reserved two extra days for private staff training. If you are interested in customized training -- specifically tailored for your staff -- these day-long sessions are perfect. We will be in Sydney, Melbourne, and Adelaide.

To learn more, to reserve your seat, or sign up for training, please contact Young Australia Productions Pty. Ltd. for more information:

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Web: www.youngaustralia.com.au

Technique: Creating multiple keyframes at once

Here's a technique you can use to set motion keyframes in multiple clips at the same time in a sequence. Then, a modification of this technique that gives you more control over the keyframes you set. To do this, we will learn how to set keyframes in the timeline.

When I'm creating motion effects, I'm working almost exclusively in the Viewer, so I don't use Timeline keyframe editing very much. (Actually, I'm being polite. It's been years since I've edited keyframes in the timeline.)

Still, there are some tricks you can do in the timeline that just can't be done in the Viewer. And I'm indebted to the new Apple text book on *Advanced Color Correction and Effects* in Final Cut Pro 5 (published by Peachpit Press), which I've recently been reading, for pointing out the error of my ways. This technique shows off the power of setting keyframes from the timeline.

Here's how it works.
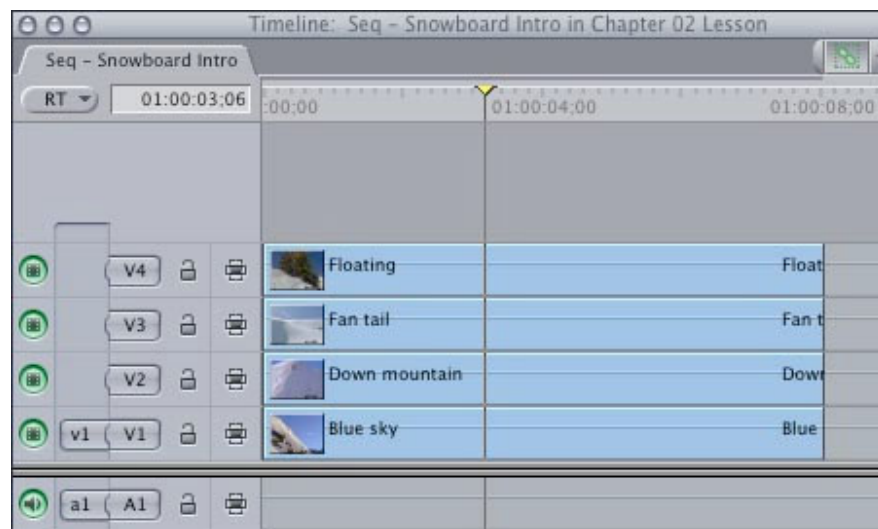
I've created a sequence of four clips in the timeline. Let's say that I want them to all scale to different sizes, but the scaling all starts and ends at the same time. (By the way, there is no limit to the number of clips you can use in this technique, nor do they all have to be the same length. I just arbitrarily decided to use four.)
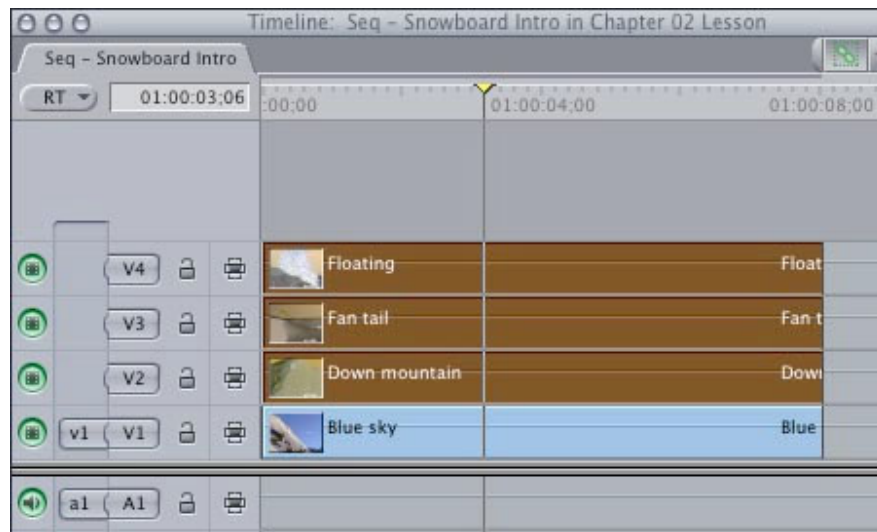
Put your playhead where you want the keyframes to be placed, then select the clips to which you want to apply the keyframes. In this case, I want to leave the bottom track untouched, so I selected the top three tracks.

Add Motion Keyframe – ^K

In the lower right corner of the Canvas, click the "Add Motion keyframe" button.

Double-click a clip to load it into the Viewer and notice that keyframes have been added to every parameter in Basic Motion, Crop, and Distort. This technique does not set keyframes in filters, nor in other motion tab parameters.

Modification #1 - Editing keyframes in the Timeline

Toggle Clip Keyframes – ⌥T
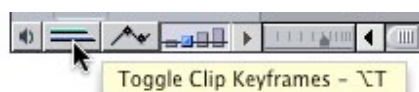
In the lower left corner, click on the "Toggle Clip Keyframes" button to turn on keyframe editing in the timeline. This step allows you to modify keyframes in the timeline.
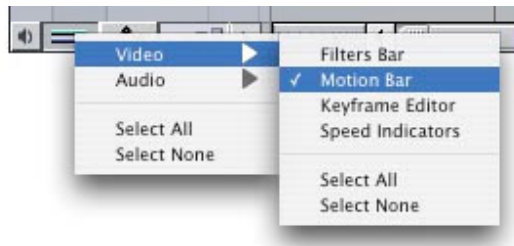
Control+click on the button and Select None to uncheck all the options, then turn on only the Motion Bar. This step, reduces the clutter in the Timeline and the amount of vertical space each track requires.
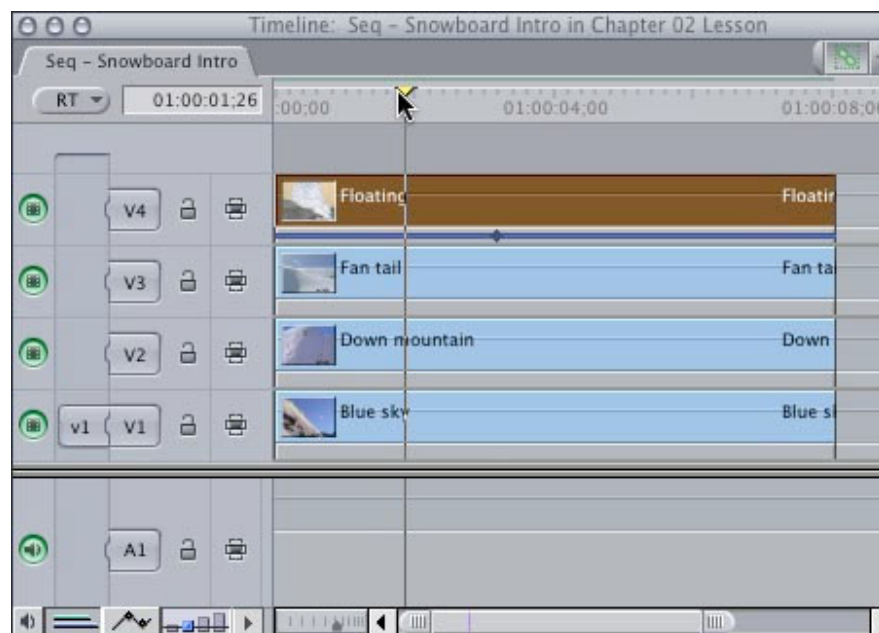
Double-click a clip, in this case I used the top clip, to load it into the Viewer. Click on the Motion tab and change the scale to some number other than 100%. In this case, I used 50%. Notice that in the gray bar below the clip, a blue line appears. This represents all the motion effects applied to this clip. Your keyframe is now displayed in the timeline.

In the Viewer, I set another keyframe in the Scale parameter.

Notice, back in the Timeline, that there are now TWO keyframes indicated. And, here's the cool part. Using the arrow (selection) tool, grab the blue line and drag it back and forth. You are now sliding your keyframes earlier or later in the Timeline; without going up to the Viewer!

Modification #2 - Setting just one keyframe from the timeline

There is one problem with this approach, however. Using the "Add Motion Keyframe" button in the Canvas sets 14 different keyframes (um, I just counted them). That's a lot. It would be much better if you could just set the keyframes you needed, instead of everything. You can, and here's how.

First, make sure at least one clip is selected and that the playhead is positioned where you want the keyframe to appear. Control+click on the Add Motion keyframe button and select "Keyframe All" to turn everything off. This screen shot illustrates the "before" and "after" you select Keyframe All.
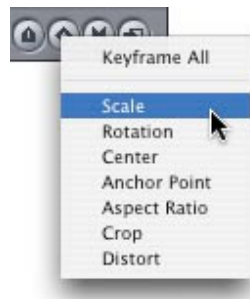
Now, Control+click the Add Motion keyframe button and select, in this example, Scale.

Make sure the selected clip is loaded into the Viewer and see that only a scale keyframe has been applied to the selected

clip. This is a GREAT technical to quickly add the same keyframe, say scale, at the position of the playhead to a variety of selected clips.
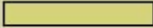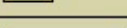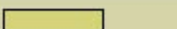
Last month's survey

Last month, I asked you for your opinion on what you are interested in learning about Final Cut. Over 500 people responded and I'm delighted with the range of your answers.

Here are the final results of the survey:

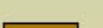| What would you most like to learn about Final Cut?			Percent	Votes
Multicam			2%	76
Color correction			7%	**196**
Getting organized			3%	80
How to edit faster			5%	141
How to trim faster			3%	79
Output and export			2%	68
Compression for DVD			6%	170
Logging and capture			1%	51
Motion effects			6%	160
Keying			3%	81
Working with HDV			4%	112
Working with HD			3%	102
Working with 24 fps video			3%	86
Working with film			1%	47
Improving capture			2%	56
Advanced Livetype			5%	152
Integrating Soundtrack			5%	140
Filter effects			4%	123
Mattes and masking			7%	190
Compositing			4%	126
File management			4%	116
Hardware configuration			3%	89
Editing aesthetics			4%	125
Other			1%	35
Total Votes				**505**

The top five subjects are:

1. Color Correction
2. Mattes & Masking
3. Compression for DVD
4. Motion Effects
5. Advanced Livetype

Thanks to your feedback, we are already working on developing new materials that focus on these interests.

This month's survey

This month, I've got something a bit more fun for our survey. I'm interested in learning what significant Final Cut feature you use the LEAST.

Now there's lots of arcane stuff that very few people use -- but this is a list of 17 major features. You get to pick up to five that you use the least.

Click here to take the poll:
http://www.pollmonkey.com/p.asp?U=4013427642

As usual, you can see the results of the poll as soon as you vote -- or whenever you look at the poll on my homepage after voting.

And thanks!

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Technique: What is Frame Offset?

Recently, on the Apple Trainer's list-serve, a debate started about the function of Frame Offset.

According to Apple's FCP 5 manual:

> No matter what signal format you use for external monitoring, all digital video and audio interfaces (including FireWire) introduce inherent processing delays (known as latency) to signals sent out of the computer. External video and audio coming from the built-in FireWire port or third-party interface may be several frames later than the video on your computer display (in the Viewer or Canvas). The latency, or offset, between different devices can make precise editing difficult.
>
> By changing the frame offset value in Final Cut Pro, you can compensate for the delay between your computer display and external video and audio outputs. Frame offset is active only when your sequence real-time effects are handled by Final Cut Pro
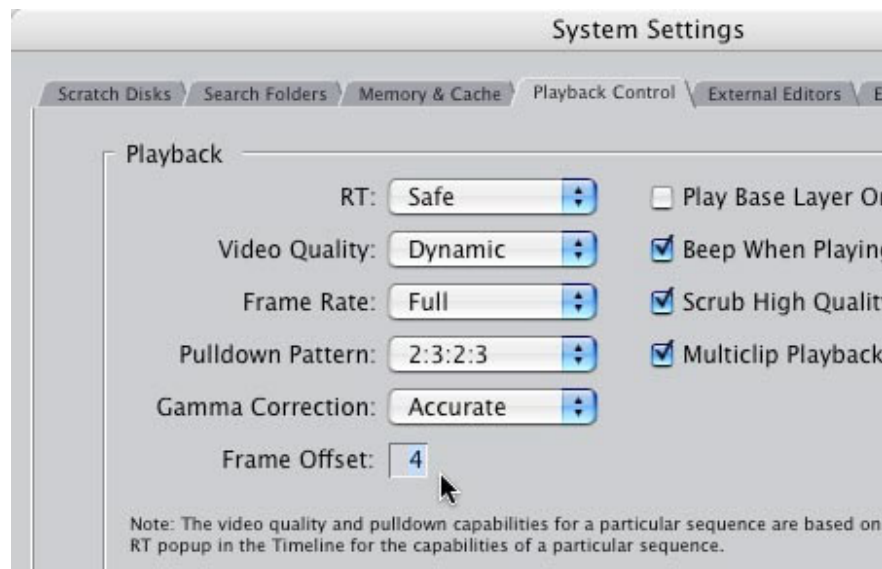
To view, or change, your Frame Offset, go to **Final Cut Pro > System Settings** and select the **Playback** control tab. Half-way down the screen is the default setting for the Frame Offset of **4** frames.

Now, here's the important part. Changing the Frame Offset changes how long Final Cut delays displaying video and audio to your *computer*. It does NOT change any output sent through your FireWire port.

In other words, if you are watching video both on your external monitor and on your computer screen, and they are not in sync, changing the Frame Offset delays your computer screen to match your external monitor, based upon the number of frames entered in the Frame Offset. This is the opposite of how Avid handles these delays. On an Avid, changing the Frame Offset changes the delay to the external monitor.

Prior to researching this, my understanding of what was being delayed was incorrect and I wanted to share this revised information with you.

Martin Baker, from Digital Heaven in the UK, further comments:

> However the Frame Offset setting is not useless if your monitoring is set up in the right way. As your original article says, it is crucial that the audio is monitored from the SAME point as the video. Therefore if you have an external FireWire converter or camera feeding a video monitor then you must also use the audio feed from that device for everything to be in sync.

Larry replies: This is why I recommend that my clients add an audio mixer to their editing suite, so that they can easily

switch their speakers from monitoring the audio from their computer to monitoring the audio coming from the deck.

**Technique: Using Media Manager
to get rid of unused media**

This technique sprang from a request from Reid Kramer, who wrote:

> I was wondering if there is an article about using FCP 5's media manager for consolidating your projects. Basically for getting rid of unused footage to shrink your projects file size.
>
> There have been many posts on 2-pops site about this and there seems to be a problem in FCP 5. Most users have said that it worked fine in FCP 4.5, but now in version 5 it does not work correctly. I have heard one user say that you need to make your sequence or your clips (independent clips).
>
> If you could explain this to me it would be great thanks.

Larry replies: Unlike other features in Final Cut, the Media Manager is not your friend. It is neither intuitive nor stable. My recommendation is to avoid it whenever possible.

Media Manager has not been significantly improved since back before the dawn of time and everyone who uses it has "issues" with it.

For this reason, I recommend not capturing whole tapes, but capturing clips in segments, which makes deleting individual clips easy, without using Media Manager. I also created my Final Cut organizational system (detailed in this article) so that you can easily archive projects and trash media, without ever resorting to using Media Manager.

However, sometimes, Media Manager can't be avoided. This technique shows you how to remove unused media from your project.

First, though, a **huge** warning: Deleting unused media from your capture files means that Final Cut will be copying and deleting clips from your hard drive. This process takes a potentially very long time. If you have a power failure, or a crash, your files can be left in such a disorganized state that you are not able to use them.

As Apple's manual says:

Be extremely careful when choosing the "Use existing" option; the Media Manager deletes each media file as soon as it finishes processing it. Canceling this operation may restore the media file currently being processed, but media files that have already been processed cannot be restored.

With that warning, here's what Media Manager does.

You select a clip, clips, sequence, or group of sequences to media manage. Using Media Manager to delete unused media will create a new project containing all the clips and/or sequences trimmed to only include the media you are actually using. Then, Media Manager goes into your capture files and permanently deletes media from the media clips stored on your hard disk that is not used in the newly created project.

In other words, if you use the same media in different projects, Final Cut only pays attention to how you are using the media in the sequences you selected. Or, if you use the same media in other sequences in the same project and those sequences were not selected, any media used in those unselected projects will be ignored and deleted.

Here is a specific example. I have created a project that contains two sequences. I want to delete all media that I am not using in either of these sequences.
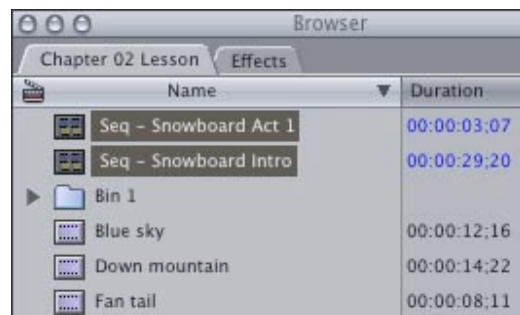
1) Most importantly, BEFORE starting Media Manager, select the sequence(s) you want to media manage. Here, I've created two sequences: **Seq - Snowboard Intro** and **Seq - Snowboard Act 1** and I've selected both BEFORE starting Media Manager. This step is critical!
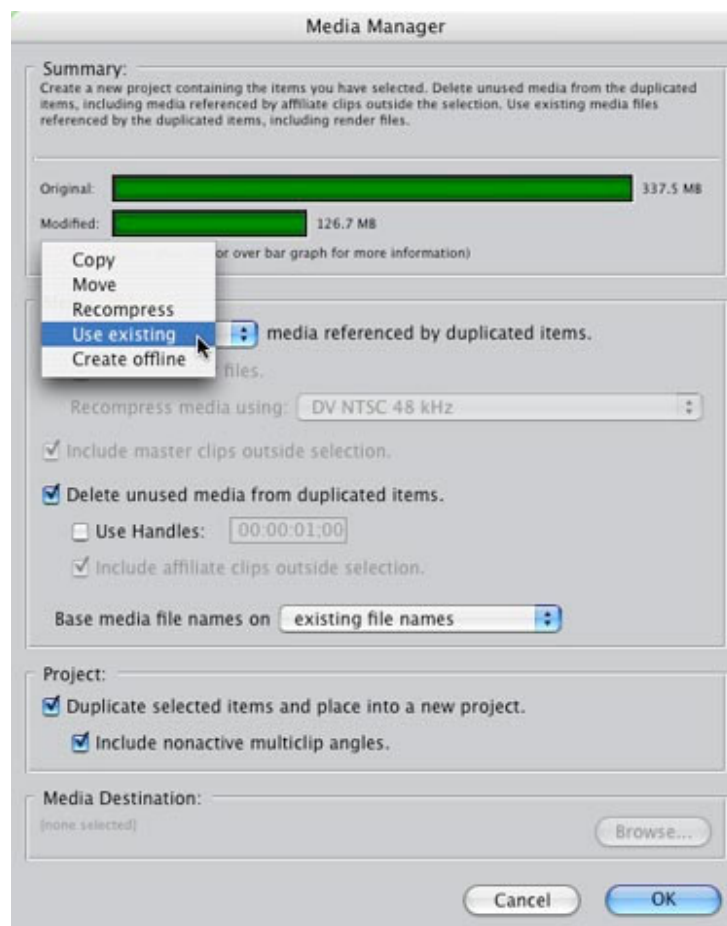
2) Select **File > Media Manager**. Then select **Use existing** from the pop-up menu. This tells Final Cut that you want to delete all media that you are NOT using in the two selected sequences.
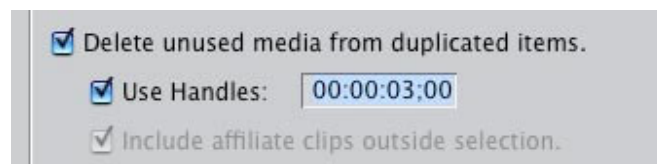
3) Then, just in case, check **Use Handles** and give yourself some pad in case you need to trim a shot or add a dissolve. I generally use either 3:00 or 5:00.
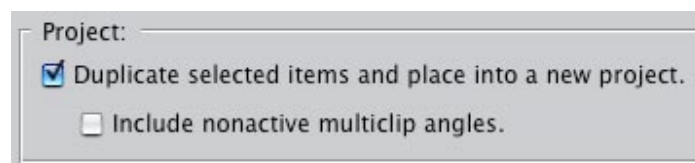
4) **Duplicate selected items...** means that Final Cut will create a new project and put the items you've selected into the new Project. This is generally a good idea, that way, your old project remains untouched in case you need to recapture a clip that got deleted by mistake.

Include nonactive multiclip angles means that Final Cut will include clips that are part of a multiclip, whether they are

used in the selected items or not. My feeling is that checking this is a good idea if you are using multiclips, because you can't rebuild a multiclip if there's a break in timecode in the middle of a clip. If you don't use multiclips, leave this unchecked.
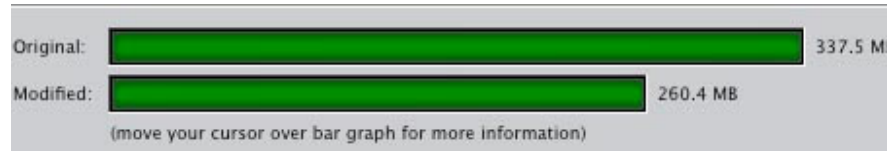
5) The bar chart at the top indicates how much space you are saving with this procedure. Your numbers will be different. Keep in mind that you are often dealing with hundreds of gigabytes of files. This process will take a long, long time to get everything copied. Don't be impatient -- give your Mac time to work.
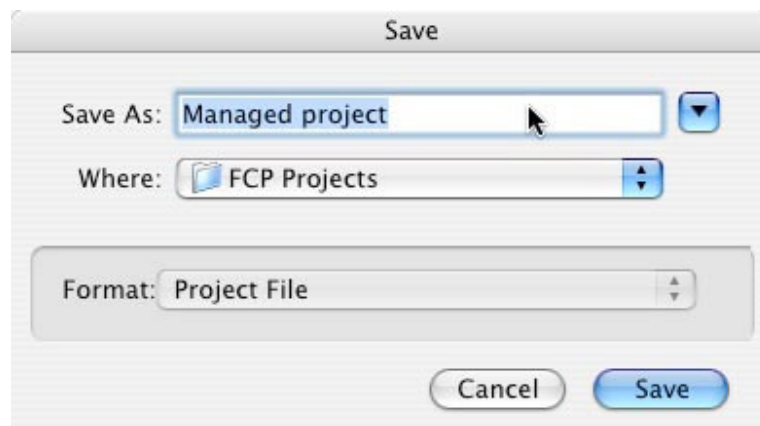
6) When you click OK, Final Cut displays a dialog asking you to name your new project and find a place for it to be stored. I always store my Final Cut projects in the FCP Projects folder.
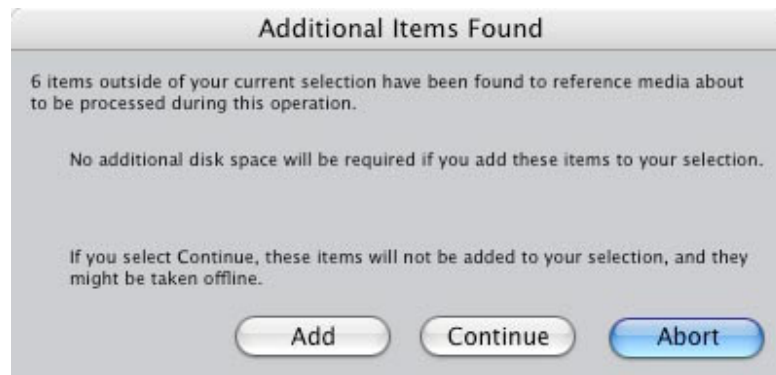
7) This dialog drives me nuts. None of these choices make intuitive sense. So, here's what they mean, according to the Apple manual:

> **Additional Items Found** dialog: When you use the Media Manager to do a potentially destructive operation, Final Cut Pro checks all currently opened

projects to see if there are any other clips that reference the same media. If so, the Additional Items Found dialog appears.

Add: Click this button if you want to tell the Media Manager to consider additional portions of media files referenced by other currently open projects.

Continue: Click this button to continue the Media Manager operation without taking into consideration the additional portions of media found. This may make some clips offline in projects outside the current one.

Abort: Click this button to stop the Media Manager operation (for example, if you want to change your original selection). Decide what you want to do, then click a button.

My recommendation is to err on the side of safety and click **Add** if this dialog appears.

Confirm Media Modifications

WARNING: This operation will permanently modify existing media files. This is not undoable, and any open projects referencing these media files will be saved.

Abort   Continue

8) Final Cut then displays one last warning that what you are about to do is not undoable. Click **Continue** if you are determined to proceed.

Processing Files...

Writing Down mountain

Estimated Time: About 5 seconds

71%   Cancel
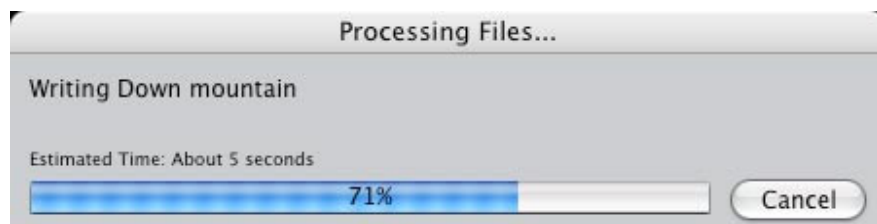
9) Final Cut then goes thru all your selected items and removes media. This process can take a while, so it displays a progress thermometer.

10) On my dual G-5, I started timing how long the process would take -- except that after it got done processing two clips -- about 22 seconds in -- Final Cut crashed.

Sigh…

So I tried it again and it crashed again.

Then, I tried again, but clicked **Continue** rather than **Add**.

Crashed again. (I am using Final Cut Pro 5.0.4 on OS 10.3.9.)

I decided to take this as a sign that I should not use Media Manager to remove unused media from a project.

Others tell me that Media Manager will remove unused media and that this is the correct procedure. However, this just illustrates my bigger point -- avoid using Media Manager by capturing smaller clips, rather than relying on Media Manager to remove media once you've captured it.

- - -

Update: However, not everyone hates Media Manager. I'll start with comments from **Kees-Jan de Maa**:

> As you know, [from our conversation in Austin] I enjoy the Media Manager and I guess mainly because it keeps us so organized. We also do 2-3 camera shoots, tapes are running all the time, than capture. so the rough edit and directly use the Media Manager. By that tie we have renamed all clips in the media bin and all is cut down to what I really need. Saves me a lot of space.

Tom Wolsky continues:

> [Your comments on Media Manager] may be unfair. I think it's been improved in every version of the application. There were improvements made in v5 and further fixes in the point updates subsequent to that. One problem I think is that people aren't getting the results they expect because of how they're media managing, what they're choosing to manage, and what settings they're picking in media manager.
>
> To be honest I would not use the Use Existing function. It's too dangerous, even more so than a potential power failure. I would use the Copy function if I had the drive space, then dump the other files after I've confirmed the media is correct. Or I'd use the move function, and then dump the other files. The important one to make sure you have unchecked is the include master clips outside of selection.

Loren Miller, of KeyGuide™ fame, writes:

> I think you are unusually harsh on Media Manager! Trimming may still be problematic but archiving is great.

Using COPY in FCP HD (4.5) , I just safely archived a project-- not a sequence, the whole project-- to a FW 800 archive drive which had DV, TIFFS, AIFF's and render media spread out over four different external and internal drives. The collected, archived project preserves all files and plays perfectly.

In fact, I generated a reference movie and burned the final sequence in it to DVD.

Larry replies: Thanks for all your comments.

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Technique: Creating and Using a Soundtrack Pro script

This technique occurred to me while I was developing a training DVD for Lynda.com on Soundtrack Pro because scripts in Soundtrack Pro have a quirky behavior that surprised me until I did some research on them.

Here's a scenario. I have a sequence containing several talking-head interviews. The audio is low on all of them. An excellent way to boost audio is to normalize it, which is a feature FCP doesn't have, but Soundtrack Pro does.

(Normalization is an audio process that increases the audio gain, or volume, of a clip without running the risk of distorting the clip's audio. Normalization is much better than grabbing a red rubber band in FCP and dragging it, because when you drag to increase the volume of a clip, there is always a risk that you have increased the volume too much and distorted your mix.)

What scripts can do is automate adjusting the volume, or other audio parameters, across multiple clips with a single mouse click.
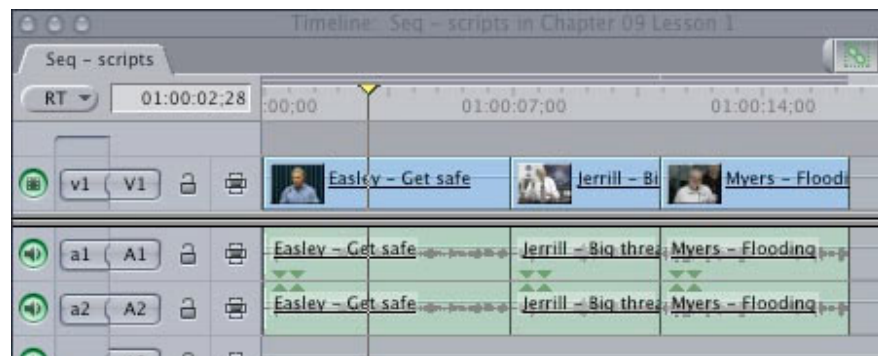
Here's a sequence containing three interviews. (Scripts can work with any number of clips, I just selected three to keep things simple.)
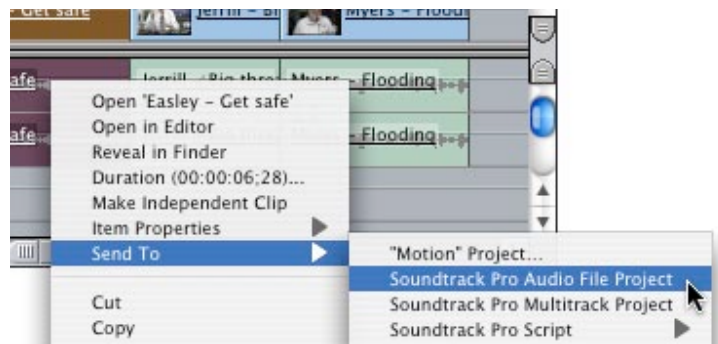
Control+click a clip, in this case the first one, and select **Send to > Soundtrack Pro Audio File project**.
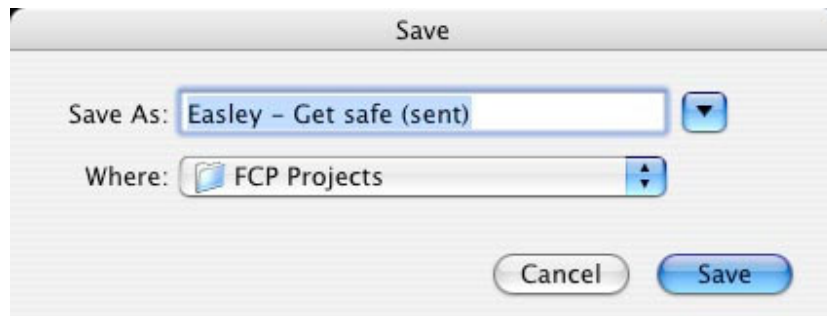
Soundtrack asks you where you want to store the audio temporary file it creates as part of this process. I recommend storing these temp files in your FCP projects folder. (Click here to read an article on how to organize your FCP files.)

Soundtrack opens and displays your clip. Press Cmd+A to select the entire clip.
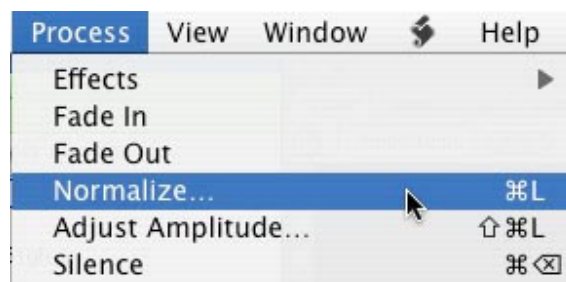
Then, go to **Process > Normalize** and normalize your audio.
(Click here to read my article on how to normalize a clip.)
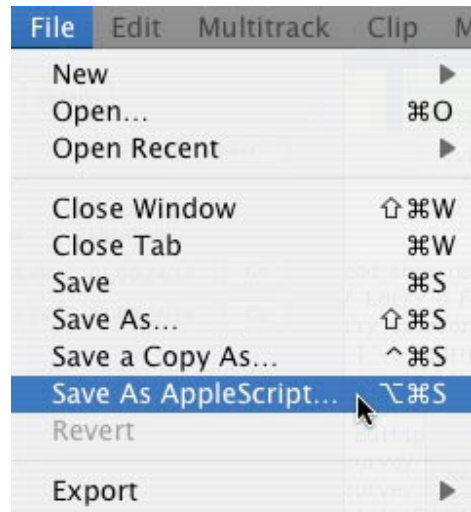
So far, this is is nothing unusual. But, before you save the
file, go to **File > Save As Applescript**…
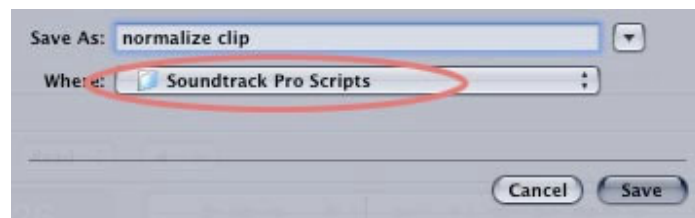
… and give your script a name. In this case, I called it
Normalize clip. (Here's an important tip -- **don't** change the
default folder Soundtrack suggests to store this script in. FCP
only looks in this folder to see what scripts are available.)
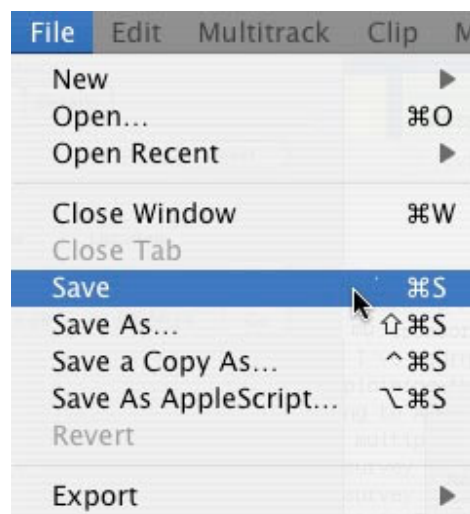
Save your audio file project and switch back to Final Cut.
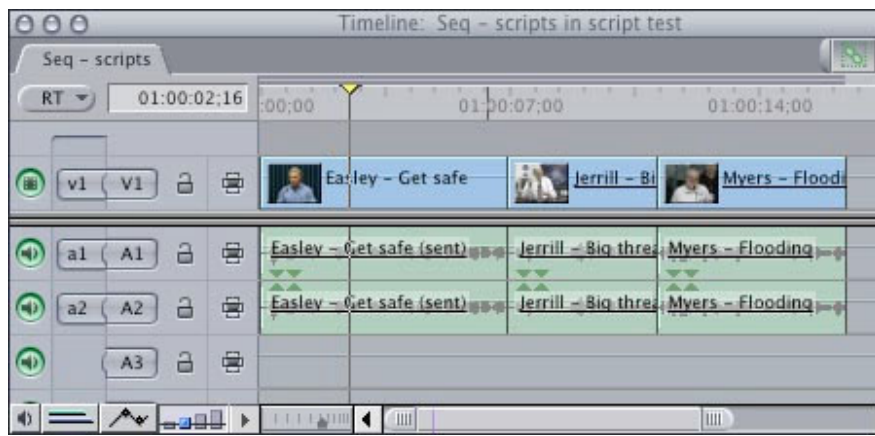
Now, here's where scripts earn their keep.

Select each individual clip (one clip at a time) and choose **Send > Soundtrack Pro Script > Normalize clip** (or whatever you named your script).

Final Cut sends the clip directly to Soundtrack, which normalizes the audio, and sends the clip back to Final Cut. All automatically and in just a few seconds. This is a very fast way to make rapid adjustments to a whole flock of clips.

Warning

However, there is one large gotcha' to worry about. Scripts work great when you select the entire clip to process. Where things break down is when you do something, such as a fade-in, that only modifies part of a clip.

In this case, when you save the script creating a two-second fade-in for a ten-second clip, Soundtrack DOESN'T say, "Add fade-in for first two seconds." Instead, Soundtrack records the script as "Add fade-in for first 20% of a clip."

So, let's say the next clip that you send to Soundtrack for a fade in is a 20 second clip. Instead of adding a 2 second fade in, which is what you created, Soundtrack adds a 4 second fade in, because that's 20% of the length of the clip.

Boy, did THAT surprise me the first time I ran into it!

So, to prevent unexpected problems, be sure to select and process entire clips when you plan to save your results as a script.

- - -

Update: Lisa Brenneis writes:

> I did post-production audio for years, and I have a mild panic attack every time I think about FCP users out there blithely applying STP scripts to their audio tracks and discovering later that STP scripts modify the original audio media file and then save the changes.That's usually such a bad idea, especially if you plan on handing your audio off to a sound specialist.
>
> FCP was designed as a non-destructive editing application and this glaring exception to the "no-destruct" rule is one of those Apple mysteries... anyway, I wish you would warn Newsletter readers that the STP script option will overwrite their original audio files.
>
> OK, deep breaths....

Larry replies: Lisa, you are absolutely correct and I forgot to mention this. Using a script permanently changes your master file on disk, unlike an audio file project which is, generally, non-destructive. You provide an excellent caution.

- - -

Update: Before we change the subject, though, **Anders Elverhøy**, from Norway, hastened to chastize me for even *mentioning* normalization:

> In the audiobiz the golden rule is "no normalization". The reason is simple, it sounds bad and destroys your sound. Since people in video mostly work with 16-bit sound, you will instantly run into rounding errors, they sound bad. Normalization will give you hard, unpleasant audio. It's much better to insert a gainer plug-in and grab those red rubberbands and work your compressor. I know this isn't the video editor's dream, but there is no way around.... sorry...

Larry replies: Anders, when working in music you are correct, normalization often makes music sound unnatural. However, when working with interviews where the audio wasn't that great to begin with, normalization can bail you out of some difficult situations. If there's time, next month I'll show you a different way to control audio using a Limiter filter.

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Reader Mail

Larry's Final Cut Pro Newsletter

Reader Mail
March/April 2006

Reader mail is especially large this month, so I've moved it to it's own page. To read the first half of the newsletter, click here.)

Subjects

- Problems repairing disk permissions
- Surround Sound
- New audio product
- Resync'ing audio files
- Syncing timecode
- Improving Speed Changes
- Exporting individual clips
- Exporting still frames
- Exporting OMF files
- Stair-stepped text
- Still image quality
- Countdown timer
- Differences in digital formats
- Converting mono to stereo sound
- The secret to sending to Soundtrack Pro
- Optimizing your processor speed
- Getting Cinewave to work with FCP 5
- Upscaling SD to HD
- Wrap-up

Problems repairing disk permissions

Cedric writes:

> My system froze and I had to re- start my computer. I trashed my preferences and I tried to run the "repair permissions" but I keep getting this error message (see attached).
>
> Every time I try to restart, the same message appears. What should I do?

Larry replies: Not to panic. This is a problem with iTunes 6.0.2 and 6.0.3, but not the current version of iTunes.

The culprit is an iTunes file: iTunes.pkg. There's a series of

iTunes files in the **LIBRARY>RECEIPTS** folder but only one of them seems to cause problems by breaking communications between the Disk Utility and Disk Manager. Once you trash the iTunes.pkg file, you should be able to run Disk Repair program without a hitch.

Surround Sound

Forrest Fox, in Minneapolis, writes:

> Right now, I'm trying hard to find some advice on just how to set up for editing in, and ultimately mastering 5.1 surround sound. Audio interface? Additional software? Monitoring? Practical systems for delivering commercial quality product. Money, is of course, an issue. Where do I start?

Larry replies: As of now, there is no way to author 5.1 surround sound in either FCP or Soundtrack Pro.

ProTools TDM supports this, as do other applications. If a reader has a favorite software for creating 5.1 surround, I'd be interested in sharing that with others.

New audio product

Andres Kiel, our XML wizard, has a new utility called Sound Count. This is, as he writes, a fast and easy way to calculate the total playing time of commercial sound in a sequence or project. This is especially useful for calculating usage rights or royalties.
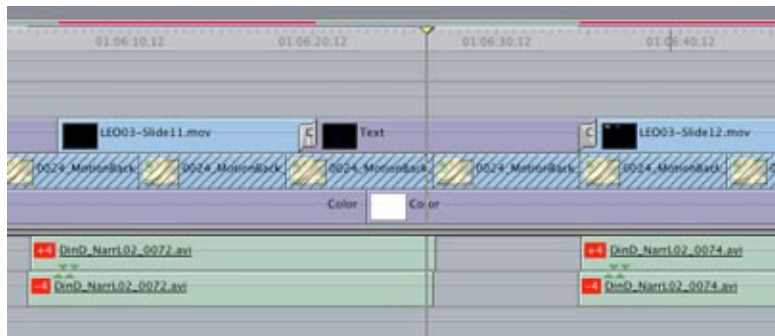
You can learn more about it here:
http://www.spherico.de/filmtools/SoundCount

Resync'ing audio files

Rudy Picard writes:

> I ran into this weird editing occurrence in Final Cut Pro. The image should show two audio tracks which are out of sync. The problem is that they're stereo tracks. So I can't simply unlink them then put them back in sync. I also tried disabling the linked selection option on the timeline, but with no luck.

Larry replies: Resync'ing is easy if you know the secret key.

First, you need to switch the audio clips from stereo (indicated by the green "bow-tie") to dual-channel mono. You do this by selecting the clip and choosing **Modify > Stereo** (or pressing **Option+L**)

Second, **Control+click** on the red flag of the top clip and select "Move into sync."

Third, reset your audio clips back to stereo by selecting both channels of the clip and typing **Option+L**.

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Syncing timecode

Wolfram Grötzner, from Germany, writes:

> [One of your readers asked how to sync audio with timecode.] I would suggest making an Aux TC at the frame of the sync-slate.
>
> But how is it possible to use a recorded TC from an audio channel as the Aux TC?
>
> I suggest they look at TimeTool: http://www.gallery.co.uk/timetools.html

Larry replies: Another great tip. Thanks.

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Improving Speed Changes

Matthew London writes:

May I pick your brain for a second? I need to slow my footage down with best possible quality (mostly just 50%, no variable motion.) Uncompressed 10bit, eventually converting to HD.

Is Twixtor (http://www.revisionfx.com/rstwixtor.htm) still the only way to go? It is horribly complicated and expensive, but I'll bite the bullet if there are no other options.

Larry replies: If you are not happy with the Modify > Speed changes that Final Cut provides, then a plug-in will be necessary.

I do not have any personal experience with Twixtor, but I have heard of Re:Vision.

Keep in mind that Twixtor does not support 10-bit video, only 8-bit, so there will be some downsampling involved. Also, if all you are doing are speed changes, you don't need the PRO version.

Finally, $330 for a plug-in, or software, is not that expensive if it's the only way to solve your problem. Try downloading their demo and see if it meets your needs. Then, let me know the result.

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Exporting individual clips

Ed Baron writes:

This is probably too simple, but I can not seem to save segregated clips.

For example, I have had some 8mm movies digitized. The problem is that the clips that were made are not separated correctly. I load the mixed clips into FCA, put them in the time line, cut them with the razor blade, separate them so there is black in between. Now, I would like to save the separated clips individually. They seem to save with all the frames as the original clip.

Larry replies: You need to do this on a clip by clip basis.

- Edit your clips on the timeline
- Set an **In** and **Out** for each clip you want to export
- Choose **File > Export > Quicktime movie**
- Make the movie self-contained and save it somewhere you can find it later
- Re-import these exported clips and you're all set.

Exporting still frames

Kathleen McNamara, from San Francisco, writes:

> What I'm looking for is information on how to export stills created in FCP into PhotoShop and work on them there to improve the image quality. Basically, I want to make a still photo out of a single frame of video.

Larry replies: First, keep in mind that video is EXTREMELY low resolution. You can't enhance what's not there in the first place.

To export a still use **File > Export > Quicktime Conversion** and set the file type to "Still image."

Load the image into PhotoShop and rescale it, using **Image > Image Size**. Make sure to turn "Constrain proportions" turned off, then resize it to **640 x 480 x 72**.

From there, you can edit it as any other digital image.

Exporting OMF files

Ken Stone brought an error in my article on OMF export to my attention. Ken wrote:

> I have been reorganizing my web site (www.kenstone.net) and when I came to your Technique: Exporting Using OMF article I remembered that I got several comments about one paragraph. I have been told by several people that 'using In and Outs' does not work to limit the export.
>
> Do you have any new information on this?

Larry replies: Ken, I just did a quick test and exported a 6-track sequence to an OMF file three ways:

- The complete sequence, including all tracks
- All tracks, but setting an In and Out so that only the first half of the sequence was flagged for export
- Exporting only the first three tracks by turning off the visibility lights on tracks 4, 5, and 6.

On reviewing the exported OMF files:

- The Complete track export and the In/Out track export were the same size

- The OMF file that was only the first three tracks was half the size of the first two.

But, says I to myself, maybe this is an artifact of how OMFs are created. So I fired up ProTools to verify the results. Here's what I learned:

- Setting an In/Out has no effect on what gets exported. OMF always exports the entire timeline
- Turning on/off visibility lights does have an effect on what gets exported. Only those tracks who's visibility light is lit will be exported.

Thanks to Ken, I immediately revised my article and wanted to let you know about this issue as well.

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Stair-stepped text

Lindsay Cornick writes:

> I am wondering if you know why, when you add a bit of text, say over black (I even tried it over a slug), center it etc as you describe so well, that it all looks nice and sharp until you render it ! (it is green/preview), then it looks shocking, jagged edges and really fairly different to the un-rendered version.

Larry replies: First, text will always look stairstepped if you are not looking at the Canvas or Viewer at 100% size.

Second, video is bitmapped, not vector, which compounds this effect.

Finally, video is MUCH lower resolution than your computer monitor, which also increases the effect.

In other words, stair-stepping is normal, which is why you need to use fonts which are heavier and less fancy than you would use in print or on your computer. (One of these days, I'll write an article on how to select fonts that look good on screen.)

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Still image quality

Sue, from Boston, writes:

> I am currently running into a problem that no one has been addressing. It has to do with importing still images - they are crystal clear when I import them,

but when they are on the timeline and the playhead is moving, they blur. when i hit the space bar, they clear up. this doesn't sound like a square pixel issue - i've tried that anyway.

They are wedding pictures a client has given me to add to the beginning of the video I am working on. She supplied them on a cd : they are all about 2,000x1,312 pixels, 72 DPI.

Larry replies: This isn't a problem -- its a feature of FCP; and video.

Video images are only 720 x 480 x 72 -- which is a fraction of the size of the original wedding photos. Video is notorious for having low image resolution.

As well, you need to separate in your mind the difference between viewing the timeline for editing and viewing for final output. FCP always decreases the quality of images during editing, to allow more CPU cycles for real-time effects.

However, it will render all images at the highest quality video will support (that 720 x 480 number we were talking about earlier) prior to output to tape so that your final output looks great.

This rendering can be done by you, or automatically by FCP -- the results are the same. So, while your final video output won't look as good as the source photos -- because video has about eight times less resolution -- they will look as good as they possibly can.

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Countdown timer

Carlos Borges writes:

Do you know of a way, either in FCP or maybe via a plug-in, that I can place a countdown timer in the bottom corner of my video? This is for the purpose of showing the time during a mixed martial-arts fight. Basically, they have 5 minute rounds and I'd like to flash the time left in the round occasionally.

There might be a simple solution, but I've never had to generate one.

Larry replies: Carlos, There's nothing in FCP that does it automatically.

What I've done, in the past, is to create a series of text clips, each containing a number, superimpose them into a black slug,

and export them as a self-contained QuickTime movie. I then reimport the Quicktime movie and superimpose it on my timeline.

Update: Andreas Kiel writes:

There is a plugin from [Digital Heaven](http://www.digital-heaven.co.uk/).
(http://www.digital-heaven.co.uk/)

But there is an option to build one within FCP:

- Create a new sequence and select some generator, a text one without text, a masked out slug or maybe an imported logo or animation for the counters background - don't forget to delete audio tracks, if there!
- Now set the In to 0 and the Out to whatever time you want to start the count down - or even much higher. You may have to change the duration of the generator manually.
- Apply the "Timecode Reader".
- Uncheck "Ignores Opacity".
- Set "Opacity" to 0 - or a value you may want to have for the background.
- Adjust "Center" - and color maybe.
- If you want to get rid of the frames, open the clip in viewer, select the "Motion" tab and adjust the "Right" crop - but this will also cut the background, if you decided to have one.
- Now use "Sequence -> Nest Item(s)…" and name it "My counter" or something like that.
- Apply "Speed -> Reverse" to it.
- Drag the clip to the browser or a bin - or export to QT with an alpha capable codec, and re-import as you suggested.

Now you can use the counter anywhere in your sequences.

The above described method has a nice advantage - if you think the style of your counter needs to be changed, you only have to do it in the "Master" once. And as always, you can export it as XML to use it in multiple projects, with the option to make individual changes in the project itself.

There are many other options with the "Timecode Generator" as well, for example you can use that one and select the "Frame" option, and set a "Pre Speed Change" so that one frame will last a second, or minute.

Tom Wolsky adds:

TMTS has a free timer generator. It's come with

some editions of my book.

Larry adds: Thanks, Andreas and Tom.

Differences in digital formats

Bill Lynch writes:

> A basic question for your newsletter from a novice. What is the difference between the Data Digital format that allows editing in FCP and the Video Digital format. One hour of video data is 13 GB and would require three 4.7 GB DVDs to contain whereas 2 hours of Digital Video can be burned onto one 4.7 GB DVD via a Firewire connection.
>
> It seems Digital Video takes up no more space on a DVD than Analog Video does. If both the Data format and the Video format are digital, the Video has to be captured into FCP and then printed back to Video after editing, what is going on here with the 0 and 1s?

Larry replies: Bill, just because it is digital does not mean there is no difference in quality. There are many, MANY digital video formats. Some are totally uncompressed with incredible quality. Others are stupendously compressed, with many compromises in quality.

Totally uncompressed standard definition (i.e. not high-def) video is about 109 GB per hour. Digital Betacam requires about 96 GB per hour to store. Digital Video (i.e. miniDV) requires 13 GB per hour to store. MPEG-2 video for a DVD requires about 2 GB per hour to store. Each of these is listed in order of decreasing quality.

The differences are in how each handles resolution, color data, motion, video compression, and a host of other technical attributes that all contribute to the overall look of the video.

Converting mono to stereo sound

Klaus Hanusa, from Berlin, writes:

> Now I got a problem: I'm edited a film which was transferred from 16mm original material (including with mono optical sound), but when I put the QT material into the FCP timeline I got the mono sound only on the left channel, the right channel is empty.

But later I add also stereo based music on the beginning of the film and at the end.

So, the problem is, how to get a stereo/mono mix and how do I get the mono track left to the right track? Because I wanted later on for DVD the mono track at least on both channels playing!

Thanks again for your kind help.

Larry replies: Simple.

Double-click the mono audio clip to load it into the Viewer.

Drag the Pan slider to the middle. This pans the audio so that it sounds equally from the left and right speakers.

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The secret to sending to Soundtrack Pro

Markus Wernig, from LA, writes:

In your recent issue, **Lou Dullien** wrote:

I'm having a problem sending audio clips to Soundtrack Pro in order to do noise reduction. I've watched and downloaded the QuickTime tour of Soundtrack Pro that demonstrates how to do this, off of the apple site. The only problem is, when I control click on the audio clip, my only option for sending it to Soundtrack Pro is: "Send to soundtrack pro multi-track."

I can't figure out why I can't send to Soundtrack Pro audio file. I think this is the reason I'm not getting the same results as in the QuickTime tour. HELP!

Here's a second way to solve this:

If you have a dissolve on your audio clip and both the clip and the dissolve are highlighted before control-clicking, you'll only get the "Soundtrack Pro Multitrack-Project" option. If just the clip is selected and NOT the dissolve, both Soundtrack Pro options are available.

Larry: I like this tip, thanks!

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Optimizing your processor speed

Gary Hughes writes:

> After reading "Optimizing your Processor" from Andrew Ficklin, and your reply, ("My recommendation is to set it to Automatic if you have a G-5, and set it to Highest if you have a G-4."), my question is this:
>
> I have a G5 dual 2.7 AND a 1.67 PowerBook. I do a lot of work on my PowerBook, including FCP logging and basic editing, Photoshop, and simple stuff in Motion, STP, After Effects, DVDSP, Dreamweaver… I also use the PB for non-creative work, such as email, web browsing, word, iTunes and Reversi (did I say "work"?). Would you still set the processor to Highest on my PowerBook?
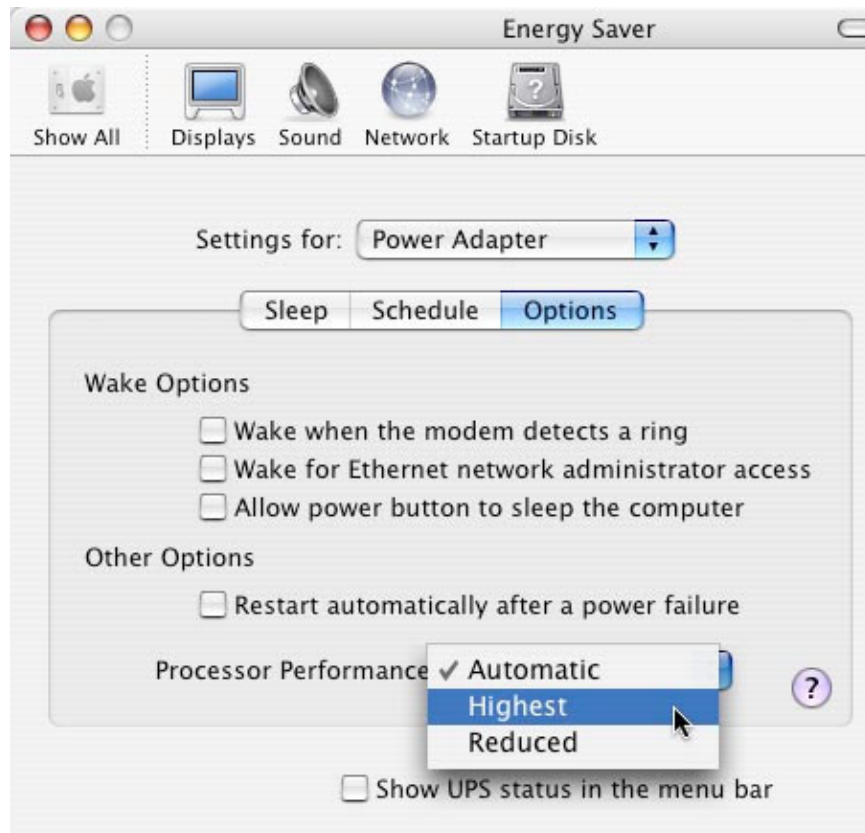
Larry replies: You can change your CPU setting in System **Preferences > Energy Saver > Options** tab. You can also change it when you need different levels of performance. If you don't need a lot of processor power, go back to Energy Saver and reset it.

However, when I'm editing, or doing other power tasks, I set my G-4 to Highest.

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Getting Cinewave to work with FCP 5

Rick Lavon took exception to my saying the Cinewave card would not work in FCP 5. He writes:

> While you are correct that the Cinewave card is no longer supported or made, it does indeed work with Final Cut 5.0.4 and OS 10.4.4. I have been using it for about 8 months in this configuration and I am outputting a half-hour uncompressed broadcast show weekly. Here are some tips and tricks that worked for me.
>
> I installed a new drive and left my original drive alone. I took out the Cinewave PCI card, I then did a fresh install of Tiger. then did the updates to get it to 10.4.4. Then I upgraded to Quicktime 7.03. Then installed Final Cut Pro, then installed the Cinewave card, software and updates. Make sure you update all your peripheral devices like USB-Serial cards and SCSI or Fiber cards. Finally repair all permissions at least twice and reboot.
>
> I find it is more responsive and less prone to crashes now then before. I know I will eventually have to trade up to an AJA card, but it is not correct to say it does not work.

Larry replies: Cool. Please remember, though, that this is an unsupported use of the card.

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Upscaling SD to HD

Uli Plank, from Germany, writes:

> Larry, while FCP 5 is doing a decent job when set to best rendering quality for the motion tab, I recommend PhotoZoom Pro for the job.
>
> (http://www.benvista.com/main/content/content.php)
>
> It'll do batches of more than 1,000 frames and does a pretty advanced upscaling, trying to preserve edges while avoiding stairstepping. FCP upscaling will just look soft when compared to it.

Larry replies: Thanks.

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Wrap-up

Well, that wraps it up for this issue of the newsletter. The next edition will be released after NAB, so I can cover whatever

happens there. We've got some exciting stuff planned for the next few months and I'm looking forward to telling you about it.

In the meantime, please buy one of our newsletter back-issue CDs. Over 560 pages of great tips than can make you a whole lot more productive for not a lot of money!

Or, join us for our Australian tour in April. Contact Young Australia Productions to learn times and schedules.

Also share your opinions in our monthly poll. Click here to vote: http://www.pollmonkey.com/p.asp?U=4013427642

Finally, I'm grateful for all your comments and questions. I love hearing from you and when you share your ideas and suggestions, we all learn.

Thanks and edit well.

Larry

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